THURSDAY, JANUARY 25, 1883

THE THIRST FOR SCIENTIFIC RENOWN

FEW students of science can fail to feel at times appalled by the ever-increasing flood of literature devoted to science and the difficulty of keeping abreast of it even in one special and comparatively limited branch of inquiry. Were merely the old societies and long established journals to continue to supply their contributions, these, as they arrive from all parts of the country, and from all quarters of the globe, would be more than enough to tax the energy of even the most ardent enthusiast. But new societies, new journals, new independent works start up at every turn, till one feels inclined to abandon in despair the attempt to keep pace with the advance of science in more than one limited department.

One of the most striking and dispiriting features of this rapidly growing literature is the poverty or worthlessness of a very large part of it. The really earnest student who honestly tries to keep himself acquainted with what is being done, in at least his own branch of science, acquires by degrees a knack of distinguishing, as it were by instinct, the papers that he ought to read from those which have no claim on his attention. But how often may he be heard asking if no means can be devised for preventing the current of scientific literature from becoming swollen and turbid by the constant inpouring of what he can call by no better name than rubbish !

Some sciences seem to be specially exposed to inundation of this kind. Geology lies exposed to it in an unusual degree. Popular in its subject, and capable of ready apprehension as to its general principles, this department of science allures the outsider into its precincts, where he too frequently soon arrives at the belief that to have read a geological book or two is to become a geologist. This belief would be harmless enough, did it not speedily bear fruit in "papers" communicated to scientific journals, and stamped with all the enthusiasm and crudity of a beginner. On no account should any check be placed on the legitimate ambition of the youngest aspirant after scientific renown. But we venture to think that the common precipitate publication of his earlier efforts is not a legitimate ambition ; but on the contrary is really an injury to himself and a positive hindrance to the progress of the science which he no doubt loyally desires to serve. It too frequently happens, moreover, that his first efforts are directed to the pleasant task of discovering flaws in the work of those who have preceded him. And of course the more eminent these predecessors, the greater his credit in setting them right. Let him take to heart the old maxim, *Festina lente*. The longer he delays his appearance as an author, and the wider he meanwhile extends his practical experience of nature, the more tolerant will he become of the work of others and the less overweeningly confident of his own. In no department of natural knowledge can a real acquaintance with the subject be gained save as the result of prolonged study.

These reflections have been suggested on the present occasion by the perusal of a pamphlet which exhibits in the most glaring way the tendency on which we have animadverted. It is devoted to the announcement of a brand-new theory of the origin of Fingal's Cave.[1] Curiously enough this is not the first time that the basaltic colonnades of Antrim and the Scottish Isles have furnished the text for teaching the most arrant nonsense. Nearly forty years ago a sailor, familiar with tropical bamboo jungles, started the idea that columnar beds of basalt are neither more nor less than petrified growths of bamboos. After vainly trying by occasional newspaper letters to find supporters, he seems to have given up the struggle against the blind prejudices of geologists. In 1864, however, his views were taken up by another writer yet more outrageous, who published a pamphlet of nearly 100 pages, entitled "The Giant's Causeway once Bamboos," and in supporting his dogma ran a tilt at religion, science, tradition, history, in short at everything that happened to suggest itself in the course of his incoherent and erratic pages.

The author of the pamphlet cited below, Mr. F. Cope Whitehouse, M.A., &c., is obviously a man of original genius, and is resolved that the world shall know it. In the summer of 1881 he seems to have come with the mob of tourists that annually makes a pilgrimage to the coast of Antrim. But instead of merely submitting to be led through the usual route by the inevitable and inexorable guide, he boldly separated himself from the gaping crowd, and proceeded to meditate. To his rapid mental vision it was soon apparent that the caves of that coast-line, instead of being the work of the sea, as ignorant mankind has hitherto believed, have been hollowed out by human hands. At once he could perceive the intimate relationship of Gothic doorways, ancient civilisation, mediæval castles, Irish manuscripts, and the "Kelto-Iberian, Wend or Phœnician" race. The narrow sea-worn gullies of Antrim being thus shown to have been ancient harbours, his eye looked northwards to the dim blue Scottish Isles, and his venturous imagination at once demanded whether that world's wonder, Fingal's Cave, might not after all be merely a piece of man's handiwork. To state the question was in effect to answer it affirmatively. Nevertheless that no unsympathetic geological Philistine might blaspheme, our courageous hero sailed for those far islands of the west, saw Staffa with his mortal eyes, and found how well his prophetic intuition had divined the secret of that weird place. We almost envy the thrill of satisfaction that must have vibrated within him as he proudly felt that scientific observers for a century past, from the days of Sir Joseph Banks down to our own time, had one and all missed the true meaning and history of the Caves of Staffa, and that it was reserved for him, casual visitor as he was, to lift the veil and reveal the mystery to our astonished gaze.

Knowing well the type of which Mr. Whitehouse is a fresh and most characteristic example, we hardly require his assurance that as soon as his eye lighted on Staffa his "conjecture received strong and unexpected confirmation. It was subjected to rigid examination ; it was strengthened by opposition." Of course it was. Then, like all similar enthusiasts, his soul could find no rest until he had proclaimed the truth to the nations. Returning to America, he found an opportunity of enlightening the darkness of the American Association for the Advancement of Science, at its meeting in Montreal in August last. A few weeks later he proclaimed the great discovery to the Academy of Sciences of New York. But these were limited audiences, though composed, no doubt, mainly of scientific men on whom as yet the true light had never shone. It was absolutely necessary to appeal to a wider, and possibly more sympathetic public. Accordingly he published his views in the December number of the *Popular Science Monthly*. But he was still unsatisfied, till at last he conceived the noble idea of combining the spread of truth with promoting the erection of the Statue of Liberty enlightening the World. He hired a theatre in New York, gave an account of his astonishing observations, charging a dollar a head for admission, and stated that the proceeds of his "matinée" were "to be devoted to the pedestal of the colossal statue." Let us hope that the sum realised was worthy at once of the great truths proclaimed by the lecturer, and of the national object to which it was to be given. Future pilgrims to the colossal Statue of Liberty will piously scan the pedestal, searching for the stone that shall hand down to the far future the name of the illustrious seer who could brush away the tangled cobwebs spun by a century of scientific babblers, and pierce into the true meaning of the Cave of Fingal.

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[1] "Is Fingal's Cave Artificial?" A paper by F. Cope Whitehouse, M.A. (New York: Appleton and Co., 1882.)

Mr. Whitehouse has published so far only an abstract of his address, but he has had it well printed with good illustrations, and seems to have generously scattered copies of it broadcast over this country. It was not of course at all necessary that he should communicate the steps of the reasoning by which he was led up to his great discovery. And he has considerately refrained from troubling the world with such unprofitable details. Still one cannot help trying to follow the mental process by which an epoch-making deduction has been reached. We get from the abstract glimpses of the way in which the received explanation of the caves of Staffa collapsed at the touch of Mr. Whitehouse's genius. He visited the scenery in calm summer weather. From Staffa he could see the great sweep of the Mull cliffs to the east and the broken rampart of islands all round the rest of the horizon. As the smooth sea mildly heaved along the base of the basaltic colonnade, he could easily persuade himself that Staffa must be a "singularly sheltered," "land-locked" island, and that "the force of the breakers is inconsiderable." How absurd then must it have appeared to him to attribute to that placid lake-like water the power of hollowing out caves in a rock so obdurately stubborn as basalt! Moreover, he could see no reason why the sea, supposing it gifted with such power of erosion, should have chosen the places where the caves actually occur. And his inability to find this reason satisfactorily disposed of any possible action of the waves. Not only so, but from his stand-point at Staffa his clear vision could take in the whole coast-line of Scotland, and he made the further important announcement, which will doubtless for ever silence our northern geologists, who believe in the geological power of the waves, that "there are very few hollows worn by the sea in the Scotch coast!" Having cleared away the fictions of so-called scientific observation, he could apply the much more reliable conjecture which his glance at the Giant's Causeway had evoked in his own mind. To his trained eye the caves of Staffa were obviously artificial. Oracularly he tells us that they are "strikingly Phœnician." "No such Gothic arch was ever formed by nature. No natural cave has an entrance higher than the interior." (!) Lastly, from the end of Fingal's Cave you can see the Hill of Iona rising against the sky, consequently the cave must have been excavated by men who lived on Iona. This final argument must be regarded as a crushing answer to those who have recklessly talked of the power of the waves in these regions. On what conceivable grounds can we suppose that the sea would make a tunnel, from the end of which the Dun of Iona would be visible?

Perhaps some unconvinced outsider may be tempted impertinently to ask for what object such stupendous excavations could have been devised by any civilisation, whether ancient or modern—excavations always swilled with the surge, often unapproachable for weeks together, and in which, even in calm weather, unless care be taken, a boat is liable to have its bottom knocked in. Of such questions Mr. Whitehouse very properly takes no notice. Again, we were in the belief that the religious community of Iona had been an eminently peaceable folk, liable to invasion by pirates from the sea or marauders from the mainland, but with little more to oppose in the way of defence than the prestige of their sanctity. But this conception also is now found to be false. We learn, on the same reliable authority, that they were a warlike race, quite able to look after themselves. It appears that Mr. Whitehouse has shown "the strategic importance of Staffa, and the probability that the wealth and refinement of Iona were due to the protection it afforded." He will have no difficulty in further proving that the traditional picture of the saintly Columba is a mere myth, and that the abbots of Iona possessed an army and navy, made war on heathen Pict and savage Scot, curbed the fury of fiery Norseman, and employed their gangs of prisoners in tunnelling the caves of Staffa!

There is a hollow among the rocky knobs that rise inland from the summit of the cliffs above Fingal's Cave. We would fain place Mr. Whitehouse there on a day when the gathering clouds have blotted out Ben More, when thick mists are driving along the opposite precipices of Gribon, when the Treshnish Isles grow fainter every moment in the western sky, when even Iona, that lies so near, is fading into the general gloom, and when the wild moan of the rising south-western gale among the crags around is answered by the hoarse clamour of the surge below. We should like to keep him there while the gale rapidly increases, breaker after breaker careering madly forwards with foaming crest from under the pall of driving rain that hides the sea, dashing into every creek and cave, rushing in sheets of green water up the face of the crags, and pouring back in hundreds of yeasty torrents into the boiling flood. We would ask him still to stay till the storm has reached its height, that he might feel the solid island shake under his feet, that he might see the sheets of water, foam, and spray thrown far up into the air, that he might hear the cannon-like thunder of the shock as each billow bursts into the Cave of Fingal. He would return a wiser (and a wetter) man, and would regret that in a rash moment he had published some childish nonsense about man having excavated sea-worn caves, and had expressed an opinion about the power of the sea of which he would then feelingly admit that he had been profoundly ignorant.

The pamphlet here noticed did not in itself deserve consideration in these columns. We have made use of it as a type of publication painfully frequent in the literature of science. If in exposing its characteristics we deter any rash and immature aspirant for fame from at once rushing before the world with what he conceives to be his discoveries, we shall have done a service at once to him and to science.

CINCHONA PLANTING

A Handbook of Cinchona Culture. By Karel Wessel van Gorkom. Translated by Benjamin Daydon Jackson, Sec.L.S. (London: Trübner, 1883.)

Die Chinarinden in Pharmakognostischer Hinsicht dargestellt. Von F. A. Flückiger. (Berlin: R. Gaertner, 1883.)

THE rapid extension of cinchona planting in India, Ceylon, and Jamaica will make a translation of Van Gorkom's account of the methods of cultivation and harvesting pursued by him, as Director of the cinchona plantations belonging to the Dutch Government in Java, useful to many who propose to turn their attention to this profitable industry. At present intending planters in British possessions have had little beyond Dr. King's Manual of Cinchona Cultivation (1876) to serve as a guide. In Ceylon the planting community includes many men of first-rate ability, and the singularly energetic journalism of the island speedily ventilates for the common good any fresh idea or point of practice in planting procedure.[1] Indian planters share the benefit of this, while Jamaica has the advantage of possessing in Mr. Morris, a director of its botanical department, who has carried to the West Indies an intimate knowledge of all that is being done in Ceylon. It is not very probable that those who are at present occupied in cinchona enterprise in British possessions will glean much from Van Gorkom's book. Still such a manual will not be without its use for those who have everything to learn about the matter, and, as will be seen, it cannot fail to be interesting to those who watch from an independent point of view the economics of the subject.

The book is handsomely printed and got up—too handsomely, indeed, for workmanlike use, for which its size, that of a small folio, seems particularly unsuited. We must too make a serious protest as to the style of the translation, which, we think, cannot be considered tolerable, even with every allowance for "seeming inelegancies" which Mr. Jackson pleads for in his preface. Take, as a sample, the first sentence which caught our eye:—

> "If we trust that this excellent opportunity for fruitful comparisons shall lead to unfettered judgment, still more do we look for, from the impressions received and the enlarged field of view, the scientific work carried on, which has so long been in hand, and most certainly with great completeness and undisputed knowledge of material, will indicate our present standpoint in the domain of quinology" (p. 264).

Now it is quite certain that this is not English, and we have some doubts whether it really conveys any meaning at all. But at any rate we would ask what is the use of translating in this way a work the purpose of which is not literary but essentially utilitarian. There seems, in fact, to be a deep-rooted superstition about the value of so-called fidelity in translating books of mere information. In rendering a foreign language as a philological undertaking, it is often desirable to sacrifice, to some extent, style and form, in order to convey as nearly as may be, the exact force of each word and of each turn of expression. But where, as in a technical treatise, it is only the context we care about, it is exasperating to find the translator exhibiting a would-be scholarly care over the exact reproduction of the vehicle. All we want him to do is to master the meaning and give it to us in clear, straightforward English.

Having said so much by way of criticism we may indicate a few points which we think will be interesting even to some who are not colonial readers of NATURE. A hundred of the three hundred pages of which the volume consists is given up to historical matter regarding the history of *Cinchona* and the development of its culture in Java and in British possessions. All this is an oft told tale, and contains little that will not be found in Mr. Markham's Peruvian Bark (reviewed in NATURE, vol. xxiii. pp. 189-191). An exception must be made, however, as to the interesting account of the commencement of cinchona cultivation in Bolivia. The existence of this enterprise was known, but we have not met with any previous account of it. The Dutch Consul-General reported to his Government:—

> "The great event in the agricultural region of Bolivia is the planting of the Bolivian cinchona forests, of which an earnest beginning was made in 1878. . . . The river Mapiri, in the province of Larecaja, department La Paz, has been the centre of the movement, and already the young trees of two years' growth, may be reckoned at from four to five hundred thousand" (p. 17).

Doubt is, however, expressed whether the planting will be maintained in the face of labour difficulties and a possible fall of prices in consequence of increasing exports from the East Indies.

Modern cinchona enterprise in Java has aimed at the production of barks rich in quinine. With the lucky purchase from Mr. Ledger in 1865 of a packet of seeds of the now well-known *Cinchona Ledgeriana*, the Dutch "cinchona culture of the future has entered upon an entirely new phase" (p. 77). About 20,000 of the seeds germinated in Java, and first and last Mr. Ledger received about 24*l.* from the Dutch Government, and "was therewith well content" (p. 91). Fortunately the greater part of the seed originally imported was purchased by a well-known Indian planter, Mr. Money, and some of it seems by private channels to have found its way to the Government plantations in Sikkim. The Dutch having got this valuable kind seem to have managed it with extraordinary intelligence and skill. Men like De Vrij, Moens, and Van Gorkom were well-trained European scientific men and competent chemists. Their object was by continuous selection, controlled by repeated analyses of bark made on the spot to obtain races of *Cinchona Ledgeriana* richer and richer in quinine, and it is a matter of general

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[1] Of T. C. Owen's Cinchona Planter's Manual, published at Colombo, we know nothing beyond the name.